

Abstract:

A device for detecting parts in a material flow which influence an electromagnetic alternating field comprises an oscillator (1) and at least one transmitting coil (2) for generating an electromagnetic alternating field extending across the width of a conveying distance of the material flow. At least one detector coil (4) comprising two windings (4a, 4b) connected inversely detects the electromagnetic alternating field and generates a detection signal (DS), the phase signal portion (PS') of which is detected by means (7), from the relative motion between the alternating field and a field-influencing part. The phase signal portion (PS) and the amplitude signal portion (AS) of the detection signal are supplied to means (12) for forming a locus curve from the progressions of the phase signal portion and the amplitude signal portion of the detection signal and plot these pairs of variates as a locus curve (15, 20, 30) in a system of coordinates. The locus curve (15, 20, 30) is analyzed by means (14) for evaluating the locus curve with respect to material-specific characteristics and for emitting an identification signal (ES) upon detection of a material-specific characteristic.

(Fig. 1)